

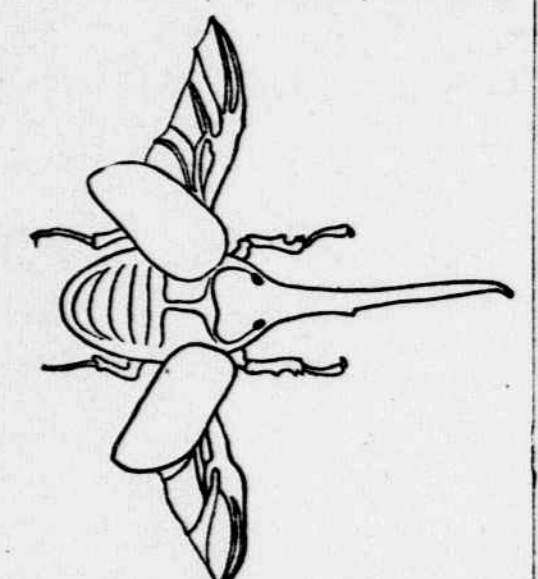
SCIENCE AND INVENTION.

Work of the World's Busy Brains in Discovering, Inventing and Creating.

BEETLES.

The Most Numerous Family of Living Things, and Which Exceed in Number of Families Those of the Animals.

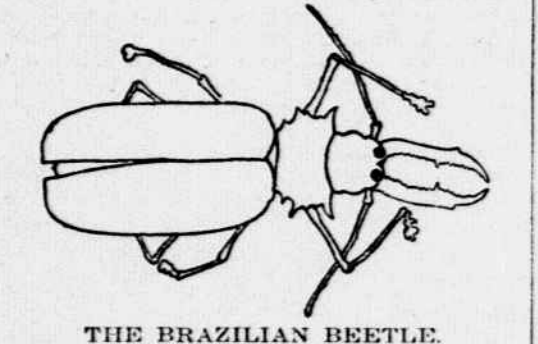
The most numerous order of living things are the beetles, which comprise about 100,000 different species, or more than twice the total number of the backboneed animals. Among these myriads there is the most marvelous diversity of form, color, size and habits.



THE HERCULES BEETLE.

Probably the largest known insect.

As a general rule they are strong, voracious insects, acting as universal scavengers, remaining concealed during the day and feeding at night. Very few of them make long flights. Their food varies greatly from hard wood to soft fruits and the carcasses of animals. They are found in the water and on land, among plants and stones, burrowing in the ground and drilling holes in

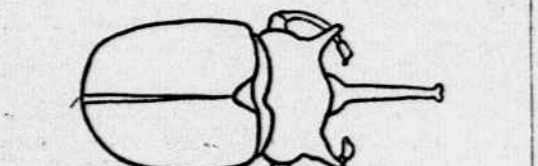


THE BRAZILIAN BEETLE.

wood. Among the most important of the families with relation to man are the following:

Bark-beetle.	Fire-fly.
Blister-beetle.	Glow-worm.
Burying-beetle.	Lady-bird.
Cantharis.	Meal-worm.
Churchyard-beetle.	Oil-beetle.
Cockchafer.	Scarabaeus.
Colorado-beetle.	Stag-beetle.
Death-watch.	Water-beetle.
Devil's coach-horse.	Weevil.
Dung-beetle.	Wire-worm.

For some reason, probably connected with their theory of immortality, the



GIANT SOUTH AMERICAN INSECT.

ancient Egyptians made much of the Scarabaeus Enema, which the children call the "tumble-bug," and which can be seen in the Summer time rolling balls to its hole. They had this figured on all their monuments, representations of it were carved out of precious stones, and every ancient Egyptian had a number of these made of such material as his wealth would warrant, even baked clay. The Scarabaeus was universal among them and numbers are found with every mummy. Archaeologists are much puzzled as to the exact part that the Scarab played in the Egyptian scheme of life.

The Staghorn beetle is another very interesting insect, and derives its name from the curious resemblance of some of its antennae to the shape of a deer's horns.



STAG BEETLE.

Many of the beetles are of the greatest value to man in devouring carrion, fifth and harmful parasites. The latter are called Aphididae and are best represented by the genus Coccinella, or Lady-bird. These pretty little beetles live almost entirely on aphides or plant lice, and in this way do immense service.

The great majority of the beetles are vegetable eaters, and do an immense harm. The largest insect in the world is the Hercules beetle, which attains a length of seven inches. The spread from tip to tip of the wings is over eight inches. The coloring is a glossy black on the head and jaws, dull green with dark mottlings on the wing-sheaths and reddish brown on the



SCARABAEUS ENEMA.

body. The insect attains its greatest growth on the island of Santo Domingo, but it is numerous elsewhere. Brazil has a great beetle, the Macrodonia Cervicoides, which measures from five to six inches in length and more in the spread of its wings. Its coloring is a light cream with reddish-brown markings on the wing-sheaths, while the color of the head is a velvety brown. It extends over all the warmer part of South America.

Another very common beetle in South America is the Megastoma Elephas. The male is grayish-black, five inches long and two inches broad. The female is smaller in both dimensions and of a much darker color.

Access to Pending Applications. The Patent Office promulgates the following:

Rule 18. Before any attorney, original or associate, will be allowed to inspect papers or take action of any kind, his power of attorney must be filed. But general powers given by a principal to an associate cannot be considered. In each application the written authorization must be filed. A power of attorney purporting to have been given to a firm or copartnership will not be recognized.

nized, either in favor of the firm or of any of its members, unless all its members shall be named in such power of attorney.

Work of the Patent Office.

For the week ended Oct. 17 the Patent Office issued 522 patents, 136 trademarks, one label and two prints; making a total of 671. Of these 468 patents and 139 trademarks, etc., went to citizens of the United States and 64 to those of foreign countries.

Apron Clasp.

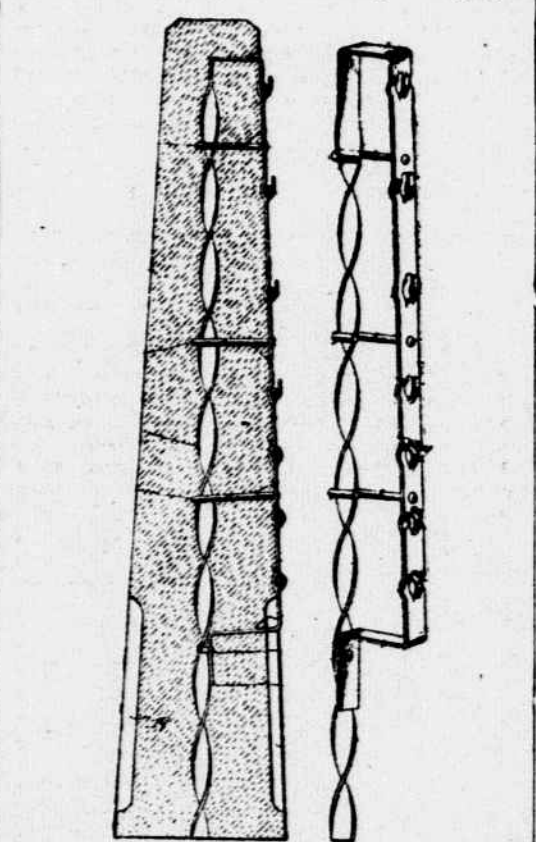
Albert N. Fries, Cincinnati, O., has procured a patent upon a garment clasp especially intended for aprons and consisting of a shank with means of



attaching tape and a U-shaped hook to engage an elongated ear upon the other end of the apron string.

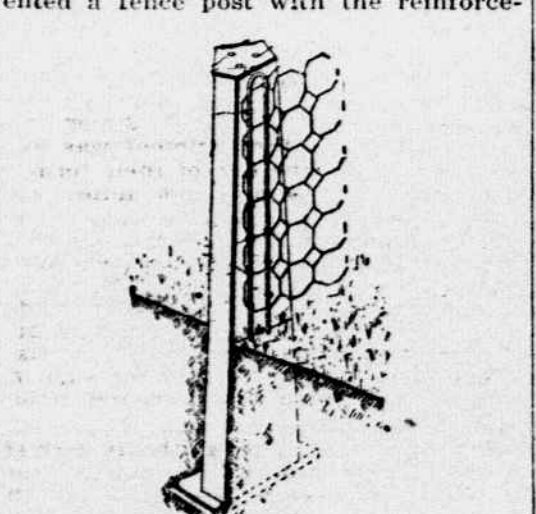
Fence-Post.

Esek McDaniel and William R. McCallister, Paris, Ill., have patented a concrete fence-post having engaged



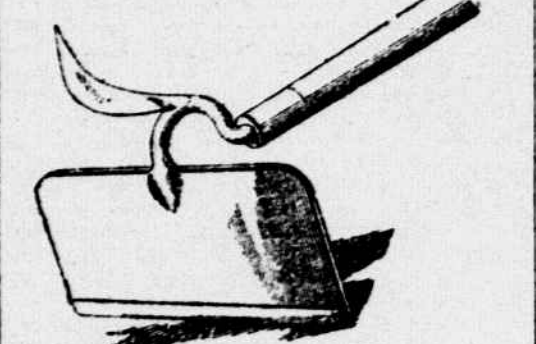
eyes or loops projecting from one side and a U-shaped locking key adapted to pass through the eyes and secure the fencing to the post.

James F. Haffey, Tiffin, O., has patented a fence post with the reinforcement



ment formed in a peculiar manner and connecting with hooks to engage the strands of wire.

Samuel J. Garner, Temple, Tex., has patented a hoe having a cutting blade extending from the shank above the



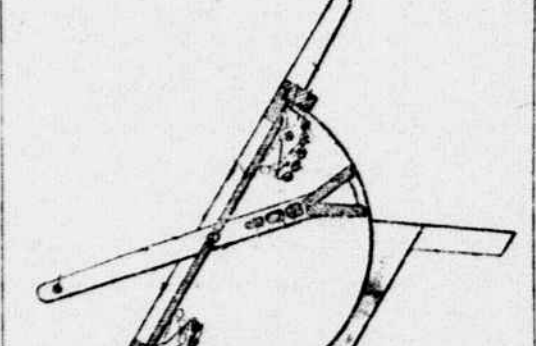
hoe. This enables the hoe to at once cut anything which is too resistant for the hoe.

Wallace C. Lyon, Hyattsville, Md., has patented a tire-protecting device which consists of a series of inter-



changeable links each having a hook at one end and a pin at the other with the inner face of the links concave and the whole so adapted as to form a chain around a tire.

Carl E. Miller, Akron, O., has added to the number of patent washing-machines with one which has upright



arms swinging upon pivotal points and provided with a dasher, squeezing members and rubbing bars.

Charles T. Holmes, Charlotte, Vt., has patented a pruning saw having



with pins to arrange it at different angles to saw the limbs from trees at some height from the ground.

Wrist Supported Blotter. Benjamin Monis, New York, N. Y., seeks to reduce the labor of bookkeeper.

Swimming Appliance. Edward J. McKittick, Walla Walla, Wash., has patented a swimming sandal to give the swimmer more purchase on the water. It consists of a sole por-



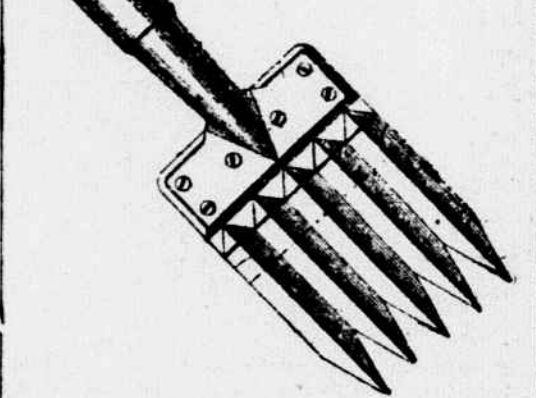
tion provided with straps to hold a broad flange against the foot. The flange is pierced with holes which have valves open as the swimmer draws his foot forward and close when he pushes it back.

Ice Shaver. Louis Olson, Minneapolis, Minn., has patented a hand ice scraper with a cut-



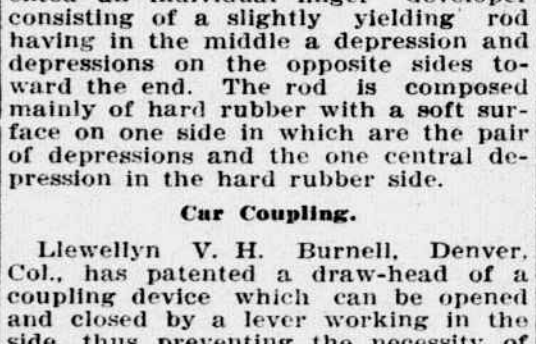
ter plate flat at one end and corrugations from the flat portion to the opposite end terminating in sharpened points.

Individual Finger Developer. Lizzie B. Beall, Decatur, Ill., has patented an individual finger developer consisting of a slightly yielding rod having in the middle a depression and depressions on the opposite sides toward the end. The rod is composed



mainly of hard rubber with a soft surface on one side in which are the pair of depressions and the one central depression in the hard rubber side.

Car Coupling. Llewellyn V. H. Burnell, Denver, Col., has patented a draw-head of a coupling device which can be opened and closed by a lever working in the side, thus preventing the necessity of



fastening in between the cars to make the coupling.

Gearring. Charles H. Oumpbaugh, Rochester, N. Y., has received a patent for a bicycle and motor gearing. On the pedal shaft is a lantern wheel with rollers and cogs and engaging other lantern wheels upon the driving shafts, which have at the other end a similar lantern wheel engagement for rotating the rear wheel.

NEW USES FOR ALUMINUM.

It Figures in Steel Making, Household Utensils, Textile Mill Work, Lithography—The Output Constantly Increased to Meet Growing Demand.

More aluminum is manufactured in Niagara Falls than in any other place in the world. It was on Aug. 26, 1885, that the works at Niagara Falls started operation, and in the 10 years that have passed the development has been wonderful, greatly benefiting the steel interests, for in the modern method of making steel aluminum is used in small quantities.

Usually from two to five ounces of aluminum are put in each ton of open-hearth steel made, and from six to eight ounces into a ton of Bessemer steel. In fact, had every ton of steel made in the United States in 1904 been subjected to this treatment, something like 5,000,000 pounds of aluminum would have been consumed by the steel industry alone.

In 1904 5,600,000 pounds of aluminum were made in the United States, an increase of 1,100,000 pounds over 1903. In 1902 the output in the United States was 7,300,000 pounds. The output in 1903 is of particular interest, because of the fact that 20 years before that output was only 83 pounds, and at the end of the first decade of manufacture, in 1893, only 339,629 pounds were made.

Every day aluminum is applied to new uses, the most common being in a wonderful degree. Aluminum paper is one of the latest products, and it is said to be far superior to tin foil for similar uses. Aluminum is used for household utensils as well as those for military purposes. In textile mill work aluminum spools and bobbins are very popular, and as a setting for lenses aluminum is much lighter than brass. It is used on railway cars, on locomotives, lithographic plates, letter boxes, in patented explosives, for making acid carboys and many other chemical vessels.

PLATINUM.

An Increase in Price Brings an Increase in Production.

The war between Russia and Japan is probably responsible for the fact that the output of platinum in the United States increased from 110 ounces in 1903, valued at \$2,080, to 200 ounces, valued at \$4,160 in 1904. Owing to the fact that the Russian part of eastern smelters of platinum in Russia, the price of platinum rose about 10 per cent during 1904, and the consequent rise in price led to much more production. The increase in the price of platinum is due to the fact that the Russian part of eastern smelters of platinum in Russia, the price of platinum rose about 10 per cent during 1904, and the consequent rise in price led to much more production.

The world's total supply of platinum for the year amounted to about 300 kilograms, or 660 pounds, of which the United States produced 110 kilograms, or 242 pounds, and 6,000 kilograms, or 13,200 pounds, from Russia. No production of platinum from Australia, platinum and palladium from the Sudbury copper mines continues to come on the market, but it is not profitable to extract all of the platinum and palladium which these ores could furnish. Increased interest in the occurrence of platinum in hydraulic mines and dredges of the Fraser River is due principally to the fact that the natural alloy of iron and nickel previously found in Josephine County, Ore., and in De Norte County, Cal., has also been found in commercial quantities in the Fraser River at Lillooet. An interesting and new occurrence of platinum in place in Sumatra has been noted by Prof. L. S. Rundelshagen. All the American platinum came from California and Oregon, inasmuch as operations have been suspended in the Rambler copper mine, Nevada, which furnished some platinum the year before.

MR. WILLOUGHBY'S "BARGAIN."

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(From the All-Story Magazine. By Una Hudson.)

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"That dog," he went on, advancing an argument that he felt sure would appeal to her, "is worth \$10. I got him for two."

"Dear me," said Mrs. Willoughby. Into her tone had crept a shade more of interest. "He seems to be all right. I wonder," she said dreamily, "why they reduced him."

"All over him," said Mr. Willoughby. "He's the greatest bargain you ever saw."

Mrs. Willoughby tiptoed excitedly after her husband. Then her anticipatory "Oh" gave place to a disappointed "Ah!" Mr. Willoughby had placed the wobbly, blinking puppy on the hall table.

"Isn't he a beauty? Look at his points!"

"Where?" asked Mrs. Willoughby. "In a why-don't-you-know sort of tone."

"He's a pointer."

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